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SEVERE INJURY OF THE HEAD—COUNTER IRRITATION, AND COMPRESSION—SINGULAR RECOVERY.

[Communicated for the Boston Medical and Surgical Journal.]

MR. ASA KNIGHTS, aged 79, while in the act of throwing down hay for his cattle, was precipitated headlong on to the barn-floor, striking upon his head. The blow was principally received on the left parietal bone and vertex, shattering the cranium, and producing *contre-coup* or counter fracture of the opposite side. There being no one near, he was not discovered for some minutes after the accident. The day was excessively cold; he was found lying on the floor, coiled up, and insensible. With great difficulty, and the aid of two females, he succeeded in reaching his house, not far distant. Being called immediately, I found him lying on his back, in a comatose state, with paralysis of the arms, stertorous breathing, coldness of the body, respiration weak, pulse feeble and intermittent, pupil of the eye fixed and contracted, and a constant harassing cough. On examination over the seat of the injury, the scalp throughout presented a puffy and œdematous swelling, pitting on pressure, and rendering it very difficult to ascertain the extent and location of the fracture, which proved, on further examination, to be an extensive one, with depression occupying the region of the middle and posterior angle of the right parietal bone, continuing nearly to the extent, corresponding with the size of this bone, at its junction with the occiput, lambdoidal, and temporal sutures. Deeming the case a critical one, my attention was immediately called to the relief of the patient, by all the remedial agents that could be made use of. By means of warm camphorated brandy applied to the scalp; dry friction, with flannel, over the body; heat to the extremities, and sinapisms to the soles of the feet and inner calves of the legs, with a free use of strong infusion of warm coffee internally, we succeeded in establishing re-action, with increased and diffused warmth over the body. The pulse rose and became full and frequent. Scarifying cups were applied to the temples and thorax, the pulse sinking after the abstraction of about six ounces of blood. We completed our treatment for the night with the application of compresses dipped in cold water to the head, confined with the four-tailed bandage, necessary instructions being left with the at-

tendants keep the circulation equalized as much as possible through the night.

On visiting our patient, the next morning, we found no amendment in his symptoms, those of compression being even worse; the sensibility of the surface had remarkably increased. He complained of lancinating pains in the neck, at the junction of the atlas with the base of the cranium; pulse small and intermittent; respiration irregular and laborious; suffocating cough, with increased expectoration, and mucous rale over the whole chest; passed his fæces and urine involuntarily; great tenderness in the region of the liver; angle of the mouth drawn up, and nervous twitching over the whole body. Continued the cold applications, tightened the bandage, applied sinapisms to the nape of the neck and over the region of the liver. A large emollient poultice was applied to the chest; the neck being fixed and inclining to one side, was supported with soft cotton pads. This, with applications of warmth to the extremities, a mild anodyne, and diluent drinks, completed our morning prescription. Visited throughout the day. No alteration; pulse weak, small and fluttering; tongue red at the edges, coated with a thick brown fur. Continued the same treatment until the third day. Believing that he would die, and the friends becoming anxious, I proposed a consultation, and called in Dr. W. W. Sweat, of Portland. We concurred in opinion that the trephine was not premised, on the grounds of the great extent of the injury, his advanced age, and the almost total abolition of function in the respiratory nerves, from the injury of parts whence they arise. We were unanimous in the opinion that he would not survive long, and decided on a palliative treatment.

Fourth day, became conscious of passing his urine; cough violent; expectoration profuse, swallowing the same; tongue partially paralyzed; pulse somewhat increased in fulness and frequency; bowels constipated; heat of the head increased. Ordered him an injection, and a laxative to be continued throughout the day, composed of sal. sulphate of magnesia and vin. ipecac. Sinapisms to the chest, and iced water to the head. Bowels operated upon by the medicine. Symptoms of compression the same; coma complete, answers questions only when aroused, and then incoherently.

Continued in this state up to the tenth day, without alteration. Remedies varied according to circumstances, watching carefully the disturbed functions of the organs of vital importance, combating symptoms, supporting the system, and making the prevention and subduing of inflammation our chief aim.

Eleventh day.—Continues the same. Meningeal inflammation more apparent. Complained of a sensation of cold over the body; temperature of the surface low; great heat in the head, accompanied with restlessness and jactitation, convulsive twitchings, active delirium, and wild incoherent ravings. Ice to the head, counter-irritants to the nape of the neck and spine; neutral salts continued, with mild anodynes.

Twelfth day.—Thought him dying—everything denoting a speedy dissolution; features shrunk; breathing stertorous; passed his stools and urine involuntarily; loud mucous rattle in the bronchial tubes; tongue

paralyzed; picking at the bed-clothes; heat of the head diminished; extremities cold; pulse small and compressible; breathing principally by the muscles of the jaw. Continued our treatment to restore the sinking energies.

Visited him in the morning. Symptoms somewhat better. Condition slightly improved; countenance bloated and flushed; considerable heat of the head and surface; cough violent; great tenderness over the hepatic region. Administered a mercurial cathartic, followed by the neutral salts, and ice to the head.

Visited in the morning. Patient calmer; had a free evacuation from the bowels. At noon, marked symptoms of inflammation of the substance of the brain were developed; and during the night following, he became restless and active, raved incoherently, requiring two men to keep him on his bed

Fifteenth day.—Countenance more bloated; great heat in the scalp; cough incessant; complains of lancinating pains in the head; pulse 110, somewhat fuller and more tense. Scarifying cups to the temples and neck; ice to head; bandage and compress continued; also neutral salts and vin. ipecac., combined in solution, given in small doses throughout the day, with other adjuvant remedies.

Continued about the same up to the eighteenth day, with great intolerance of light and noise, severe pains in the back of the head, active delirium, and skin dry; cough and expectoration undiminished; breathing stertorous, with loud snoring. The features of the case presented no apparent change up to the twentieth day, then apparently worse.

Twentieth day.—Visited him in the morning. Learned that he had passed a bad night. Countenance indicative of great anguish; mouth distorted; pulse 45 per minute, weak and small; lying coiled up in his bed, and speechless; convulsive twitchings over the whole body; function of respiration almost annihilated; extremities and head cold. Warm camphorated plaster to the whole scalp; sinapisms to the feet and inner calves of the legs; warm, dry frictions over the whole body; emollients over the region of the liver. Ordered him a little wine through the day, and an ethereal anodyne. Left him with the belief that his dissolution was fast approaching. Visited him in the evening, and found him better; continued so through the night. From this period he began to improve, his convalescence being slow, having been supported throughout on a mucilaginous diet and diluent drinks.

Twenty-second day.—Tumefaction of the scalp nearly subsided, except over the seat of the fracture, which presented a depression about three fourths of an inch in depth, which seemed to consist of three fragments, with irregular and jagged edges. The whole vault of the cranium appeared displaced, and shoved towards the counter-fracture. As the whole skull seemed to be shattered and fissured throughout, the puffiness over the seat of the injury having subsided, and no bony union as yet having taken place, I applied adhesive straps, in such a manner as I supposed would assist in elevating the depressed bone. Over this was placed a light compress, wet with camphorated vinegar, with cotton batting to act as a steady pressure on the right side of the

head, the whole confined by the four-tailed bandage, drawn as tight as the patient could bear. This to be re-applied from once to thrice per day, and kept moist with the camphorated vinegar—subsequently using every means to prevent purulent depositions.

Twenty-third day.—Coating of the tongue disappearing, edges not so red; pulse somewhat irregular; more conscious, and answers questions rationally when spoken to. Continues somnolent. Respiration somewhat improved; cough continues; expectoration less; symptoms of inflammation abating. Remained about the same up to the twenty-fifth day, with the exception that on the day previous he complained of lancinating pains shooting from the cervical region into the back of the head, which disappeared under counter-irritation and a mild anodyne.

Twenty-sixth day.—Quite calm; converses rationally, and in very appropriate language, on the nature of his injury, Has no distinct ideas of the time and duration of his illness. Recollection perfect, of his falling, and the place in which the accident occurred; says he tripped as he approached the edge of the scaffolding, being precipitated headforemost on to the barn-floor, without anything to break the force of the blow, and states positively that he heard the bones of the head crash, and for a few moments was sensible of his great injury, which he thought fatal.

Twenty-seventh day.—Mental faculties gradually developing themselves; somewhat somnolent yet; complains of numbness over the whole scalp, and occasionally severe neuralgic pains in the course of the fifth and sixth pair of nerves. Appetite improving, and calls frequently for food. In addition to his diet, allowed him a little beef and chicken-broth, having been hitherto supported entirely on a mucilaginous diet.

I consider the recovery of this man to be one of the most singular on record. Therefore I subjoin a few remarks, in a physiological point of view, on the deranged functions of those organs that prominently sympathize with the brain. This man exhibited hardly a favorable symptom, during the period of twenty days, so great was the lesion of function of those organs pertaining to life, by the apparent injury of the cranial nerves, as those which arise from the base of the brain, and the medulla oblongata. Those of respiration were more implicated; as the pneumogastric, glosso-pharyngeal, sub-occipital and spinal nerves, which sympathize with the motor nerve of the nutritive system, producing a lesion of function throughout, and causing the greatest irregularity of the respiratory action and circulation, which at times threatened to annihilate these functions altogether; provoking a suffocating cough, by sympathetic irritation of the recurrent branch of the eighth pair. It was observable, that during the period of three weeks, my patient carried on his respiration without any combined action of these nerves, as they would cease to perform their function in controlling that muscular action necessary to his breathing. At first the diaphragm ceased to perform its office, by the injury of its nerves from the violent concussion of the blow; then he breathed by a partial and incomplete action of the muscles of the chest, throat and abdomen. Respiration was thus sus-

tained alternately, sometimes alone by the muscles of the abdomen, and then by those of the chest. And as the lesion of function became more apparent, the action of these muscles would entirely cease their volition. He would then close his jaw, raise the larynx, and breathe by the muscles of the throat, in close imitation of the respiration of frogs, marked by an imperfect inflation of the lungs, with a rapid and quick action of the muscles of the jaw—as if sucking in the air. At this period, his respiration would become nearly suspended—and oftentimes apparently asphyxiated, calling for continued and prompt means to resuscitate him.

Fundamental characteristics of the nervous system will sometimes afford us a clue to its mysterious agency. It would seem that the recovery of the man depended on the uninjured functions of the great sympathetic, or the motor nerve of the nutritive system, which act somewhat independent of those which come directly from the brain and spinal axis; as I am fully impressed with the idea that this man would have died had not the lungs been endowed with active power, derived from branches of what is commonly called the great sympathetic nerve, or had the lungs otherwise been passive organs. The great shock which the brain and spinal marrow had received, was seen to produce its effects in a more marked degree in disturbing the functions of the phrenic and pneumogastric nerves; yet life was admirably sustained during the period of twenty days, by the enervation of the nervous ganglia, until others of no less importance regained their functions, and repaired the injury which so long vacillated and threatened to obliterate every vestige of the powers of life.

There was neither hemiplegia nor paraplegia in the case. The power of memory alone was tolerably retained throughout, while all other functions of the mind were disturbed. The recollection of recent events was abolished, while that of more distant occurrences appeared to be awakened. The stomach did not participate in any great degree, with the disordered state of the system; there was no vomiting nor nausea. The torpidity of this organ gradually regained itself as the lesion of function of its nerve became restored.

Tenacity of life is plainly visible in many genus and species throughout the whole animal kingdom. But the genus homo never represented a more anomalous case of clinging to this poor life, than this old man, especially considering the fact that he has fallen a number of times previously from the same place, striking upon his head, and causing numerous fractures and dislocations of his limbs. It is now quite four months since he received the injury, and to appearance he is quite as well, both in the functions of body and mind, as he was previous to the reception of the accident. The depressed bones have arisen to a level with the skull—being nearly regular, with the exception of being flattened somewhat on the side on which he received the blow. His neck is drawn permanently to one side, bringing his head nearly upon the right shoulder. There was undoubtedly a fracture in the bones of the cervical region, below the fifth vertebra, as distinct crepitus could be heard when the patient was raised. Very respectfully yours,

Westbrook, Me., May 30, 1852. AUGUSTUS MITCHELL, M.D.

ENTERITIS.

[Communicated for the Boston Medical and Surgical Journal.]

If we except cholera, I think there is no acute disease more to be dreaded by those who are the subjects of its attack, than enteritis or acute inflammation of the bowels, both from the intensity of suffering which it causes, and the fatal termination to which it often leads. The severe pain, intolerance of pressure and swelling of the abdomen, the condition of the skin, the frequency, quickness and generally hardness of the pulse, and the costive and inactive state of the viscera involved, all demonstrate its danger. Generally it makes its onslaught when vitality is at its maximum; and though the system offers strong resistance to the destructive principle generally, yet from its exuberance of vital elements, inflammation is quite apt to realize its worst and speediest termination.

Its pathology I do not propose to discuss, it being, I apprehend, well understood by the mass of physicians. It is not to be denied, however, that mistakes touching its identity are not unfrequent. Either from lack of discrimination or mere carelessness, it is occasionally mistaken for bilious colic—and this error is pretty certain to ensure the death of the patient.

What I propose, is briefly to consider its treatment. Taking, then, a *well-developed* case, what has been and still is the practice?

1st. It is usual to bleed from the arm till an "impression" is made; in other words, till the subject is faint from loss of blood.

2d. The bowels are cupped, blistered and leeched, agreeably to the notions of each attendant, precedence being sometimes given to the local subtraction of blood, at other times to counter-irritation.

3d. Calomel and opium are administered till the pain is quieted.

4th. Cathartics of calomel and jalap, jalap and cream of tartar, salts and senna, castor or croton oil, or other drastic purges, are given till free dejections are produced. In a few hours, if the patient be not relieved, the bleeding is repeated, and the calomel and opium continued, "*pro re nata.*"

If this practice has been modified to any extent, it is in reference to the pernicious administration of purgatives. No physician can have been an observer of these results, many years, without having witnessed the death of patients from "mortification," where "no physic would operate."

When the intestines are violently inflamed, how is it possible for purgatives to be otherwise than positively injurious in their effects? The peristaltic motion is suspended, and by its restoration only can cathartics act. That they sometimes do so, by no means proves their admissibility. They may tease and coerce the bowels into action; but this result can never be salutary, its tendency being to excite and increase inflammation.

The excessive depletion, if less dangerous, is scarcely less objectionable. The loss of great quantities of blood lessens the conservation of the system, and though it sometimes relieves, it also prostrates exceedingly. Even were there no other method of controlling the violence of disease, it would still be an important question how far the practice should be tolerated.

The exhibition of calomel and opium, in large or small doses, I consider wrong, because unnecessary. They cannot be relied on for permanent results; whether prescribed as an *alterative* or *palliative*, they are exceptionable. In this combination the calomel has a strong tendency to salivation, especially in the disease under consideration.

But there is a mode of controlling this disease, free from the objections to which I have just adverted, the applications of which are safe, salutary and efficient. I allude to its management by the use of water. Permit me briefly to describe the manner in which these results are obtained.

Let it not be forgotten that the case we have in view is one of great severity, which, if left to its natural tendencies, would probably terminate in the death of the patient.

1st. Give the patient no medicine.

2d. Nor food of any kind.

3d. Allow him to drink all the water he desires, in moderate quantities, frequently repeated.

4th. Lay upon a bed, comfortables, of sufficient thickness to absorb a large quantity of water. Over these spread a half sheet wrung from cold water, on which place the patient, folding the extremities over the chest and abdomen. This should extend from the arms to the thighs. If the sheet be so long that, in lapping, it covers more than the abdomen with a double fold, tear off the ends.

Commence the application of cold water, by saturating the fold which lies next the abdomen. This in its turn must be covered by the one from the opposite side. This process continue to repeat till the vehemence of the inflammation be subdued—the while covering the body lightly with blankets.

If during the continuance of this course the patient become chilled, a circumstance which ought never to be permitted, and against which we should be particularly careful to guard, suspend at once the cold water, and fixing the segment of a hoop over the body, next the sheet, as a defence from weight, cover the patient with such additional blankets and comfortables, carefully and closely *tucked* at the sides, as will retain the caloric of the body. A re-action will speedily appear—sooner, possibly, than will be anticipated; a rapid evaporation will follow, which being retained within these coverings, will form a vapor bath, congenial to the feelings of the patient, and adapted to afford present relief. When the heat shall have accumulated to a higher degree than is desirable, the indications of which are observed in the color of the face and frequency of the pulse, again renew the cold water.

In those terrific cases of enteritis which we occasionally meet, a majority of which are fatal, the course last suggested is a part only of what should be done. The most efficient means of reducing the inflammation, lie in the internal administration of water. Commence this process by throwing up the rectum a pint or less, at the temperature of 60°; and after waiting a half hour or more, repeat the act. Continue to do so, rapidly reducing the temperature till it shall have *approached* thirty-two degrees.

Sometimes the upper part of the rectum will not permit the water to

pass, and it will be thrown back with violence. Here is a point of life or death to the patient; for the introduction, if not his *only*, is his strongest anchor. Every physician should be provided with a flexible gum tube, which he will cautiously introduce above the point at which the spasm occurs. This being done, the control of the bowels is obtained, and *any quantity*, at a required temperature, may be passed up with ease. Steadily pursued, a large amount may thus be brought in contact with the diseased and suffering portions of the intestines. We now see the propriety of this reduction of temperature. Water thus absorbs caloric, astringes the small arteries and capillaries, is a sedative to the nervous tissue, and consequently quiets the spasm and pain. A very important consideration favorable to this practice arises from the fact of the rapid absorption, by the lymphatics and veins, of the water—the introduction into the circulation of which we might, *a priori*, have inferred, would lessen the inflammatory diathesis. I beg to illustrate.

In 1844, H. L., son of A. L., Esq., of Athol, Mass., fell from a horse, striking his abdomen upon rock. Acute inflammation was the result. His bowels swelled enormously, became excessively tender and painful, with a pulse leaping at the rate of 135 per minute. Other symptoms in violence corresponded with his pulse. The quantity of water taken into the bowels in this case may seem incredible. By estimation it amounted to twenty pints, and could not have been less. It was given at brief intervals, with the happiest results. The patient was relieved, with almost the same speed with which his sickness had been induced.

Let it be understood, however, that this quantity was not retained within the intestinal cavity at once. Less than a moiety had been received when a rapid secretion by the kidneys announced the activity of the absorbents. I could but felicitate my patient on the indication arising from this fact; for I perceived that the battle, though but partially fought, was already won. It is hardly necessary to say that he recovered.

While plying our remedies so vigorously in the manner described, there are other things which must not be neglected. It is highly important to equalize the circulation by the application, if need be, of heat to the lower extremities. Let there be great care in this particular. Thus, also, keep the head cool, and if there be a tendency to congestion, apply ice water liberally.

Another valuable application, under certain circumstances, is the cold sitz bath, where the patient is placed in a tub with water sufficiently deep to cover that part of the body affected, gently rubbing the parts submerged. This bath is mainly superseded, however, by the half sheet and ice water, as already described.

What will meet the *severe* symptoms cannot fail in favorable circumstances. The greater involves the less. Milder symptoms indicate a milder treatment; and this point the practised eye of experience will readily determine. Water, whose temperature ranges from 70 to 85 degrees, will be cold enough.

Permit me to say, Mr. Editor, without being thought egotistic, that my

facilities for testing the principles which I have endeavored to elucidate, have been ample. Whoever reduces them to practice will be not less surprised than delighted with his results. GEO. HOYT, M.D.

Boston, May 10, 1852.

ORIGINALITY OF MRS. WILLARD'S THEORY OF THE CIRCULATION.

To the Editor of the Boston Medical and Surgical Journal.

SIR,—The subjoined letter was written, not with any intention of laying it before the public, but in answer to a physician who had stated to me some views of Sir Benjamin Brodie, and inquired of me in what respect my theory was different. Having taken a copy of the letter, I read it over after the original was sent, and it occurred to me that its publication might be useful. I then made some alterations. I suppress the name of the physician to whom it was addressed, not knowing that he would be willing his name should thus be brought forward; and, in fact, not now publishing what I could call precisely the same letter.

Troy, June 7, 1852. EMMA WILLARD.

To Dr. ———

Sir,—In every great discovery there has been first a disposition to resist the novelty, as one of those idle innovations which only tend to discredit truth and produce confusion; and the real discoverer has, as a matter of course, to stand undistinguished among such innovators until proof appears that the difference between them, is, that the one party offer a false currency, and the other offers a true. When this becomes a fixed fact, then the discoverer must undergo yet another ordeal. The question being settled that the doctrine taught is true and important, then comes the query whether it is in reality *new*. Not only in its leading principles is the theory now in question the unaided production of my own mind, wrought out step by step with years intervening—but eminent persons of great knowledge have declared it to be original, and its opposers have brought their arguments against it as something before unheard of; so that I think the ground of its being an old hypothesis revived, will scarcely be now taken.

Sir Benjamin Brodie's experiments I have never investigated. I only know of them as I have seen them quoted by other writers. Among those fully *au fait* to the whole subject of animal chemistry, who have pronounced my views original, is Professor Silliman. In a note now before me, dated New Haven, May 27, 1845, he thus writes—"Mrs. Willard's Memoir (on the Motive Powers) is interesting and ingenious, and *so far as I know*, her views are original."

Dr. Lee wrote against my book on the "Motive Powers," in the New York Medical Journal, Sept., 1846,* and was answered by me the following March. Now, neither he, nor Dr. Edwards of Paris, nor Dr. Comstock of Hartford (in letters produced and answered in my

* Dr. Lee was at that time editor of the Journal, and I have been repeatedly told that the article was from his own pen.

work on the Motive Powers) treated my suggestions as borrowed, or as other than contemptible. They have, therefore, precluded themselves from saying that Sir Benjamin Brodie or any other respectable *savan*, could have previously taught them.

Indeed, before the time of Lavoisier, this theory could not have been taught by any one; for the greatest discovery of that philosopher was, that animal heat is the product of respiration and generated in the lungs; a fact which before his day was not even suspected.*

By the extracts which your obliging letter contains from Sir B. B., it is evident that he never doubted the truth of Harvey's theory, that the heart furnishes the motive power.† He was not considering the question—what is it which moves the blood. He took it for granted that it was the heart; but the question on which he labored, was, what controls the action of the heart; and he answered, respiration and the nervous system. My theory brings in a new, and as I believe, before unthought-of element, and highly important, because it is one whose operations are understood; and causes being understood effects may be controlled. This is a *chemical element*, the power of expansion by caloric —the water of the blood expanding in the lungs whose mean temperature is more than 100°, and (since the lungs act mostly in vacuo, and water in vacuo springs into vapor at 67°) changing a considerable portion of this water into steam. When the temperature goes down, as in cholera, this steam condenses, causing collapse; and thus the arterial channels are found empty at death. The medical journals will not, I hope, still be too proud to publish the results of my experiments on this subject, since cholera is now again threatening the land.

Sir Benjamin Brodie showed a logical mind in concluding that circulation was affected by respiration, though he did not see how; for respiration was the only invariable antecedent to circulation.

As to the nervous system, LIFE resides in that mysterious and charmed circle; and when that ceases, of course every animal function must cease with it. But we must not conclude, that there is no necessity of taking heed to the laws of gravitation, because a living man can, by the powers of life, move lightly about the mass of matter attached to his terrestrial being. Notwithstanding life and the nervous energy, he must heed those laws in order so to manage his balance, that he may move safely. And so must he heed those chemical laws, which his life partly controls, and which partly control his life. One of the most important of these laws, I believe that my theory has developed. For years I maintained it single-handed, and with great suffering and sacrifice. I have spent not only time and feeling, but a considerable amount of money, including the expense of publishing my books, for which I have received no remuneration. But if hereafter it shall be said of me—"she knew that the Almighty had given to her to teach a great truth for

* This conclusion was arrived at by me some time afterwards, but without knowing that it had been previously taught; and I maintained it when it was discarded by others. It thus became in my mind the germ of that theory of the animal heat of respiration producing circulation.

† Dr. Cartwright, Dr. Hiester, and others, have of late said unreservedly that I am the first to call in question Harvey's theory.

the good of mankind," it will not then be wondered at, that I pursued my mission with a martyr's zeal; though my best friends thought me foolish, and some even believed me touched, on this subject, with monomania. Under such circumstances, is it to be wondered at that a missive announcing to me that my long agony was over, my theory was demonstrated by new proof, and received where professional reputation, talent and learning would enable its new champion to command attention, overcame for a moment the sensibilities of a woman's nature. That physician, if such he be, who made the detestable pun of "crocodile tears," ought to be ashamed and ask my pardon.

Yours respectfully, EMMA WILLARD.

INTUSSUSCEPTION AND OTHER INTESTINAL IRRITATION CONNECTED WITH HYDROCEPHALUS.

[Communicated for the Boston Medical and Surgical Journal.]

WHILE a resident of Ohio, in 1850. I was requested by the parents of a deceased child to be present at the examination of the body by the attending physician, who was unable previously to come at a satisfactory diagnosis.

This physician, supposing the bowels the location of the cause of death, incised the parietes, and found an invagination along the course of the *ileum* of about five inches in length. Portions of this intestine had been received into itself in the form of a progressive intussusception, and was so thoroughly received that the induration was as great as though the intestine had contained the hardest scybala. The intestines contained small portions of green fæces. Supposing the phenomena grave enough to be fatal to the child, the abdomen was closed, and the examination considered convincing, and concluded. From some reason, however, the surgeon was induced to put the scalpel through the squamous portion of the temporal bone, until reaching the brain, at which point a colorless, limpid fluid issued from the opening.

At Cleveland, in the same State, I was once called upon to examine a child 3 years of age, the patient of another physician, which had died, according to the attendant and counsel, of a complicated malady, consisting of hydrocephalus, intestinal irritation (probably from worms), and a general enervation. I found about three gills of a straw-colored fluid in the ventricles; and on opening the abdomen, the following phenomena obtained. The intestines destitute of fæcal matter, natural in appearance, excepting a portion of the *ileum* of about sixteen inches in length, which contained ascarides. There were two, each about eight inches in length; and where one ended another commenced, stretching along lengthwise the bowel, which at this point was of a dark-red color. I found tubercles in the mesentery, the size of large peas, and consisting of a substance analogous to concrete albumen.* The child was

* The entire appearance of the primæ viæ was not conspicuously unnatural, with the exception of the portion of the ileum. I believe there was not that acme of healthy look that usually obtains in persons who have died of other and irrelevant disease. They had more the air of the skin and entire exterior of a marasmus patient.

generally emaciated, and the nutritive system was, perhaps, generally abnormal in appearance, and the external signs pointing to a scrofulous diathesis.

At Malden, a few weeks since, I examined the head of a little girl who had died of dropsy. I found considerable water, and also in this case there were signs of tabes mesentericum.

I cite these cases, simply for what they evince conclusively, and for what is inferable from circumstantial evidence. Eberle, if I remember rightly, makes the diseased physiology of hydrocephalus consist in an inflammation of the membrana arachnoides; and the *cause*, *intestinal irritation*.

Many cases of dropsy of the brain will be found in children between the ages of 6 and 20 months, with ill-shaped and apparently swelled head, small necks, light skin, eyes and hair, and irascibly tempered. I have usually found the alvine dejections of a greenish muco-slimy, or clayey nature, connected with tenesmus, and an entire suspension of all action of the abdominal viscera at the time when the head symptoms exacerbate, unless coercive action be induced, which, according to my observation, has not been supported by successful terminations.

I have designed, above, to make some consecutive statistics concerning my observation upon the conjunction of hydrocephalus, intussusception, mesenteric scrofulosis, and other abdominal disease.

Medford, Mass., June 15, 1852. CHARLES BELL.

REPLY TO MRS. WILLARD ON THE MOTIVE POWERS.

To the Editor of the Boston Medical and Surgical Journal.

SIR,—I must claim your indulgence for again troubling you. I had no intention, in the outset, of entering into a discussion of the new theory of the Motive Powers. But as Mrs. Willard has attempted to answer my queries, and has also proposed a question which calls for a response, —I trust I may be pardoned for this article, which I hope will be my last on this subject.

The *Socratic* plan of conducting a discussion, is doubtless the best method to perplex and wind up an opponent,—if not also, to bring out new facts; for the most unlearned person can ask questions, which the wisest philosophers cannot answer.

In answer to my first question, viz.: "Where is the motive power in those classes of animals which have no lungs," &c. Mrs. Willard, as was anticipated, denies the premises. This is a facile way to dispose of a question, and implies, either superior knowledge or skill in the use of sophistry. She says, "there are no animals which have not lungs, or something which answers to lungs." This then settles the question, and ends the dispute so far as this fact is concerned; for if our premise is false, our conclusion must be erroneous.

That all animals have a system of organs in which oxygenation of the blood takes place, we think no physiologist denies. And this system, we believe, is the *capillary system*. But that it is always *localized* and con-

fined to the *lungs* or *gills*, or *bronchiæ*, we deny. Men and all other animals "*breathe*," or respire, and *oxygenate*, through the skin and mucous membranes, as well as the lungs. Two functions are performed with the blood,—viz., *oxygenation* and *circulation*; these functions are both *general*, and carried on throughout the entire organization. For one function, one set of organs is required, and for the other, another set, though differing in no essential particular from the first, except in magnitude. They all possess, also, the same properties of contractility, and elasticity in various degrees, and also of Endosmosis and Exosmosis. From this analogy of anatomical and physical properties, we may infer an analogy of physiological functions. But analogy sometimes fails, and then experiment alone can give the requisite evidence. From this view, however, circulation and oxygenation are reciprocal functions: neither can be performed independent of the other. It by no means follows, because the lungs are the principal seat of oxygenation, that *therefore* they are the seat of the motive, or propelling power of circulation.

From the latitude Mrs. Willard has taken in the use of definitions, assumed premises, false consequences, and other sophisms, we might infer that she supposed the entire vascular system was only a network of lungs, or a complex system of hearts, differing only in *form* from the human heart. She has become involved in a dilemma, to take either horn of which, would be destructive to her theory. It may be stated thus:

1. The chemical force exerted in oxygenation, must be sufficient to drive the "blood all the way round from the lungs, to lungs again," or 2, oxygenation must take place over the entire vascular system. The first proposition, she denies, and to admit the second, reduces her argument *ad absurdum*.

Another difficulty still arises, in proving the chemical process of oxygenation to be the motive power of the circulation. Mrs. W. says, "that only can be a cause, which is an *invariable* antecedent." Cause is always antecedent to effect; but to say that a given effect must always have the same "invariable" antecedent cause, is nonsense. And then she does not define what she means by cause, whether *remote* or *proximate*.

Now in oxygenation, the chemical force is exerted before oxygenation occurs; if it were not, oxygenation could not occur at all; this force is the *cause* of oxygenation, and oxygenation its *consequence*. Chemical affinity is the "*antecedent*," and chemical combination the *consequent*.

We see, then, that chemical force is *not* a "motive power," generated by oxygenation, but the latter is the *effect*; the consummated design, of the antecedent chemical force, as its *cause*. It does not follow that because chemical force is the cause of oxygenation, that therefore it is the cause of the circulation; nor does it follow that oxygenation itself is the cause of the circulation. Unless the chemical force ceases to exert its power as soon as the union takes place in the capillaries, it must go with the newly-oxygenated blood and propel it through the whole round of the system; and if this is so, the blood must be constantly so oxygenated as to be in no need of returning to the lungs to be changed again. The fact in the case is that the function of oxy-

genation is finished in the capillaries; and circulation, the other function, taken up and carried on by the larger vessels, and the *heart*, in those animal which have a heart.

Mrs. Willard, as will be seen by her answer to the "Catechism," has already relinquished a moiety of her absurd claim to new scientific territory, and her worthy compeer, Dr. Cartwright, has taken from her the other half; he has persuaded her to let him locate the fœtal respiration in the placenta, thus dispensing with the mother's lungs, and placing the contingency of human existence on the very tail-end of organic life. So Mrs. Willard has given us her *heart* (but we regret to say we cannot "reciprocate civiilities"), and Dr. Cartwright has wheedled her out of her lungs. What then remains of mortality and her theory, but the glory of (we almost said originating it) writing "a work" on it. After making the lungs the origin and centre of the motive power, and then abolishing the heart altogether, from some animals, she blindly compromises her own faith by admitting that the circulating current is "*regulated*, however, *quickened*, and made pulsative, by the heart's vital and perpetual beat?" She admits, also, the suction or "*drawing force*" of the right ventricle, in propelling the blood through the venous system to the lungs. It may be very well to help herself out of difficulty, on the *suction principle*, where there is a *heart;* but in those beings without hearts, she must again find "motive power" in the lungs.

Now, if the current of blood is "quickened" by the heart's "beat," it must exert *power*, for velocity is always gained at the expense of power. So if increased velocity is admitted, "motive power" in the heart is admitted also. Again, if the current of blood is "regulated" by the heart, then the heart is the *regulator* of the circulatory system; but where is the regulator in those animals which have no hearts? Here Mrs. Willard has very innocently admitted too much, to allow her to maintain her ground upon the lungs alone. It remains, then, for her to discover *how much* of the motive power, the lungs and heart, each, really do exert. When she can settle this question, she will have taught physiologists something *new*. Physiologists have *distributed* motive power—she has *centralized* it, and then again distributed it; so they are both again on the same ground.

Mrs. Willard proposes the profound query, "how does the heart's action circulate the blood in those animals which have no hearts?" The answer to this question could be made at once, by the merest tyro in *logic*. It is plainly this—there are no animals which have not hearts, or "something that answers to" hearts. If this answer is not satisfactory, I must be pardoned if I turn Mrs. Willard over to Berard, Liebig, Magendie or Hall—who, if they think her pretensions worthy of notice, can soon settle her account with science, to the satisfaction of all parties concerned.

She quotes several authorities to prove her untenable positions; to these authorities we object, mainly because they disagree with her; but also, because, in demonstrative physical science, all authorities are useless in *proving* a proposition which cannot be demonstrated by experiment. The authorities we want are original investigators and experi-

menters; these are the *men*, who, alone, can give the answers to great questions. Not those who compile "physiology for schools," and do up morsels of science in sweetmeats for the multitude to swallow. But we will wind up this fruitless discussion and abandon the inglorious field with a brief

Résumé.—The "*motive power*" is probably all over the organism; it may receive some impulse from the chemical process of oxygenation, just at the point where it occurs; but this is not sufficient to propel the great mass of blood through its entire round, against the opposing forces—friction, gravity, cross currents, secretion and excretion, &c. &c. The current doubtless depends upon several different powers—viz., 1, the mechanical or hydraulic action of the heart; 2, the contractile power of the heart; 3, contraction of the arteries; 4, capillary attraction; 5, pressure of other parts on the vessels; 6, external atmospheric pressure; 7, chemical action; 8, electric or nervous action; 9, *je ne sais quoi.*

In order to understand this power, we must understand—1, all the anatomical conditions of the organs; 2, all the physiological conditions; 3, all the pathological conditions; 4, all the mechanical conditions; 5, all the chemical conditions; 6, all the vital conditions; 7, all the reciprocal influences of all these conditions combined.

A few of the difficulties in the way of the theory are—1, the chick in ovo; 2, respiration in the amphibiæ; 3, respiration of the fœtus in utero; 4, want of synchronism between the pulsation of the hearts of the mother and fœtus; 5, hypertrophy and other heart diseases; 6, the fœtus in utero lives for some time after the mother dies; 7, effects of injury or removal of the medulla oblongata; 8, effects of mental emotions on the circulation; and perhaps many others which we cannot think of now.

With a brief allusion to Mrs. Willard's *logic*, we will close. We have shown that in answer to the "Catechism," she has committed the following violations of correct and fair reasoning—1, she has drawn false conclusions from true premises; 2, correct conclusions from false premises; 3, begged the question; 4, shifted her position; 5, *non causa pro causa;* 6, she has used self-destructive propositions; 7, substituted new definitions; 8, denied facts.

Conclusion.—1. Mrs. Willard has discovered nothing new.
2. What she *has* discovered, she has not proven.
3. She admits the old theory.

M. M. Rodgers, M.D.

Rochester, N. Y., June 14th, 1852.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

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History of Fevers.—Men seem to be raised up at certain periods for the accomplishment of particular objects which advance the interests of mankind, as well as for the purpose of scourging humanity. Great mathematicians,

mechanics and philosophers, each in their appropriate sphere, contribute to the substantial progress of the race. As the individual who arms us with weapons to oppose our enemy at a time of imminent danger, is entitled to our gratitude; so the man who points out the true mode of managing any disease, which all past experience shows to be formidable, even in its mildest aspect, confers a great good on society. Who, of the multitude of illustrious medical writers, has yet clearly and satisfactorily explained what fever is? It is old ground, that has been long in the occupancy of contending parties, and there is little use in even naming those who have figured on it, with a view to settling the question, what is fever. One of the last, and perhaps one of the best, who has had the moral courage to step into the race course for fame, in regard to this hacknied topic, is Dr. Bartlett. His mind is a clear one, his powers of analysis remarkable, and for honesty of purpose, and indefatigable industry, in the difficult departments of theoretical and practical medicine, he is without a competitor. With these properties, he has fearlessly written *The History, Diagnosis and Treatment of Fevers in the United States.* Messrs. Blanchard & Lea have sent forth a third revised edition, in which the learned author has shown how closely he watches for discoveries from all reliable sources, to enhance the value of this standard work. Without discussing the merits of the volume, which would be of no earthly service, since its claims have been established for years, it may be gratifying to those who may write to order it, to say that there are five hundred and ninety-five royal octavo pages, in excellent type, and on clean paper. Part I. contains 12 chapters on typhoid fever; Part II. 12 chapters on typhus fever; Part III. 12 chapters on periodical fever; and Part IV. also 12 chapters, on yellow fever. In Boston, copies may be procured at Ticknor's, Washington street.

Travelling for Health.—Nothing contributes more to the general advantage of the organic machinery of the body, than occasionally varying the scene in respect to air, water and regimen. Travelling operates most beneficially upon the mind, and all the animal functions are influenced by the condition of the mental operations. Mountain scenery, nature in her wildness, and the fields in the beauty of their cultivation, have each a specific action on the temperament and feelings. However unconscious we may be of the fact, men were designed to travel, inspect and improve the surface of the earth. If they had been perpetually confined to their homes like the domestic animals, no advances would have been made in civilization; commerce would have been unknown, and the globe still unexplored. It is in accordance with our nature, to extend our circle of acquaintance with society and with things, and on the observance of this primitive law depends all progress in art, science, religion and humanity. On this principle, it is conducive to stability of health to travel; and whether one is sick or not, it is by no means necessary to seek an apology for going abroad and admiring the stupendous works of God, or the surprising achievements of man. While we are well we should travel that we may keep so. Those who can, should improve this charming season for the purpose. It is good for the well, and better for invalids of all descriptions. No charity would diffuse equal happiness, nor really prove more beneficial to thousands of feeble, pale, sickly young women, the victims of incessant toil with the needle, who have but a few luxuries and no privileges, than giving them the means of making excursions and breathing the fresh country

air. We should be rejoiced to hear that some benevolent man, whom God has placed as steward over large possessions, had obeyed the command of loving his neighbor as himself in this respect.

Bathing.—Nature indicates the season just arrived as the one when frequent ablutions are conducive to health, by frequently removing from the surface of the skin, the accumulations that result from its functions. We do not approve of living in the water, because it is agreeable in hot weather; and it is quite certain that the practice, in extremely cold weather, of leaping from a warm bed and suddenly extracting all the caloric by cold water, has been ruinous to multitudes of delicately organized ladies. They speak with delight of the reaction of the blood, the after glow; but the demand upon the vital apparatus to bring that about, vitiates the complex machinery of life, after a while, and a debility follows which can only be overcome by abandoning the luxury that produces it.

Female Physicians.—Several female physicians are in excellent practice in Boston, with an increasing business. This fact very much surprises gentlemen. They cannot understand how it is possible for them to receive any encouragement whatever, in a highly cultivated community like this, in which there are hundreds of able physicians in pantaloons; and it is predicted that when the novelty of the thing is over, sensible people will drop them, and return to the legitimate source of medical assistance. We should be inclined to believe so likewise, had not a similar prediction respecting Homœopathic practitioners utterly failed. It was said with an air of authority, years ago, by the wisest among us, that the system adopted by these gentlemen was ephemeral — that no one would be so silly a year hence as to employ them. In the meanwhile, they have increased in numbers, and certainly in public favor, if the annual professional receipts of a few of them, really princely in amount, is any indication. We cannot deny these facts, however sincerely they may be lamented. In a democratic country, the masses act upon suggestions and from impulses, not to be controlled by any other power than public opinion. More than was necessary has been said to warn the world against the impositions of Homœopathy, and therefore the contrary effect has been produced from what was intended. It has put the infinitesimal practitioners into a flourishing condition, because the sympathies of the people have been enlisted in their favor. The same prosperity awaits these female doctoresses, mainly in consequence of the opposition which has been made to them.

Northern Consumptives in Southern Climates.—It has been suggested to us, by a medical gentleman who left his northern home last fall for a residence at the South during the winter, that consumptive patients who pass the cold season in a southern climate, should, more generally than they now do, remain there *through the summer*, and return in the fall. This plan, we are informed, has been tried by many invalids, and its benefit has been apparent. They describe the summer there as very tolerable. The suggestion is certainly worthy the consideration of those who are unfortunately obliged to leave their homes on account of tuberculous or cachectic tendencies.

Political Elevation of Physicians.—In the history of the profession in New England, the following facts are worth noticing. The present Governor of Maine is a physician. In N. Hampshire, not only is the Governor a medical practitioner, but the Speaker of the House of Representatives is also one, as well as two of the executive council, besides others in elevated places. The mayors of several cities at the south, also hail from the same working ranks.

Wood's Practice of Medicine.—Since writing a notice of this work, three weeks since, we have had an opportunity to re-examine its general character. It bears close inspection, and gains upon the student the better he understands the author. Among the systems of modern practice, this will take decidedly a high rank, independently of its claims upon us as being a purely American production.

Osteo-Sarcoma of Fore-arm.—Mr. Spence exhibited to the Edinburgh Medico-Chirurgical Society, an arm which he had amputated, on account of a large osteo-sarcomatous tumor of the bones of the fore-arm. The patient, a woman aged 36, had first noticed the growth seven or eight years ago. Four years since she applied to Dr. Cruickshank, of North Berwick, who recognised the nature of the case, and recommended amputation, which the patient declined to submit to. The swelling at that time was limited to the lower end of the ulna, and was about the size of a goose egg. The patient afterwards applied to a bone-setter, and tried a variety of applications, until the tumor gradually attained its present enormous size. Some of the applications gave rise to deep ulceration of, and discharge from, the tumor, and the woman became hectic, and at last anxious for its removal, which was accordingly accomplished; and, with the exception of a large abscess over the chest, the case has gone favorably. The tumor weighed eight pounds, and measured fourteen inches in length; greatest circumference, one foot six inches; smallest circumference, one foot. A portion of the tumour examined with a microscope exhibited a number of cells of different forms, all of them containing a number of nuclei entangled in the fibro-stroma of the tumor.—*Mon. Jour. of Med. Science.*

Poisoning.—Two children, under our observation, have lately been poisoned by eating *banana* fruit drops; supposed to contain fusel oil, the ethereal preparations of which are employed by confectioners. The symptoms were those of cholera morbus, but the cause in both cases was obvious, though only a few of the drops had been eaten.—*N. Y. Med. Gazette and Jour. of Health.*

Lupus cured by enormous quantities of Cod-liver Oil.—L'Union Médicale mentions a case of lupus related in the Annales de la Société de Médecine de Gand, in which the ulcerations cicatrized under the influence, or during the administration, of cod-liver oil. The patient was a young man of twenty-three years, residing in the country, and was admitted into the hospital of Ghent on the 6th of December, 1850. The disease had manifested itself in various parts of the face and chest, and was of old standing. After purging and rest, half a pound of oil was given in the day, two equal halves being taken morning and evening; the daily dose was gradually

carried to three pounds, with occasional interruptions when the appetite failed or diarrhœa came on. The patient was in the mean time well fed, had wine and beer, and the ulcerated spots were successively touched with tincture of iodine, lemon-juice, and nitrate of silver. In the space of about seven months the cure was complete, all the lupoid ulcerations, to the number of three or four, were complely cicatrized, and the patient had purchased this result by swallowing, during that period, 265 pounds of cod-liver oil!—*The Lancet.*

Braithwaite's Retrospect.—The following note will explain itself, and is hereby offered to the notice of those concerned.

Mr. Editor,—Will you please suggest to Messrs. Stringer & Townsend, publishers of Braithwaite's Retrospect, that they would save their subscribers a great deal of time and trouble if they would publish the General Index to the Retrospect on a *separate sheet*, as was formerly done. The indices could then be bound together, and the contents of all the numbers seen at once, instead of consulting some half a dozen different volumes as is required at present. P.

Medical Miscellany.—Smallpox has become very destructive at San Francisco.—Cholera has broken out among the British troops in Burmah, creating very considerable alarm.—This is the appropriate season for using the celebrated Saratoga Empire Spring Water.—Dr. Charles T. Jackson administered ether to a young lion, last week, in order that his sharp nails might be cut off. It took a pound and a half to put the king of beasts into a quiet slumber, when with cutting pliers the sharp curved nails were nipped off.—Dr. Gannet of S. C. has been arrested for sad work in a duel.—Dr. Dupas, of New Orleans, has been sent to prison for one year—having stabbed a man.—A Dr. Andrus, of Springfield, Mass., is under bonds for doing something wrong.—A young physician, Dr. Engene Auguste Lardunoise, while attempting to jump on a train of burden cars, about two miles from Carlisle, Pa., on Tuesday last, which were running at full speed, fell and had his left arm crushed in a dreadful manner. He died in about four hours after receiving the injury. He was a surgeon in the Lopez expedition—a prisoner with that most ill-fated band, and had just returned to this country from Havana.

To Correspondents.—The following papers have been received, and are on file for publication:—Case of Death by Discharge of Serum from the Lungs; Anæmatosis, its Consequences, Prevention and Treatment; Cases of Miscarriage; Reply to "Strictures" on Strictures of the Urethra.—The documents from Dr. D. have been received, but it is considered that no good would result from their publication. An exposition of the individual who applied for professional assistance to produce criminal abortion would be useless in this Journal, and there appears no proof that the physician applied to, by a mis-directed letter, had any previous knowledge of the case.

Married,—Dr. Louis Barrus, of Virginia, to Miss C. J. Pierce..

Deaths in Boston—for the week ending Saturday noon, June 19, 60.—Males, 26—females, 34. Accidental, 1—inflammation of bowels, 2—consumption, 13—convulsions, 3—debility, 1—diarrhœa, 2—dropsy of brain, 3—erysipelas, 1—typhoid fever, 2—scarlet fever, 6—hooping cough, 1—heart disease, 2—infantile, 3—inflammation of lungs, 3—marasmus, 3—measles, 1—old age, 2—puerperal, 1—rheumatism, 1—scrofula, 1—scald, 1—suicide, 2—teething, 3—thrush, 1—unknown, 1. Under 5 years, 27—between 5 and 20 years, 5—between 20 and 40 years, 14—between 40 and 60 years, 7—over 60 years, 7. Americans, 21; foreigners and children of foreigners, 39. The above includes 4 deaths at the City institutions.

Development of Pus-Corpuscles. To the Edinburgh Physiological Society.—Dr. Sanders reported some observations on the corpuscular contents of the vesicles of small-pox. On the 4th day of the eruption, the fluid of the vesicle presented some clear, gray nuclei, about the size of blood-corpuscles, and showing only one or two granules in their interior when acted on by acetic acid. On the 5th and 6th days these corpuscles had increased in size and numbers, and become more granular; the amount of free molecules and granules, at first very scanty, was now greater. On the 6th and 7th days, nucleated cells, spherical, and more or less granular, occurred along with the corpuscles before described; and a few large cells, of the diameter of 4 to 5 blood-discs, and containing several nuclei imbedded in granular matter, were also observed. The corpuscles, however, were the chief elements; they were granular, like the usual pus-corpuscles, and presented under the action of acetic acid, some a triple nucleus, others several granules. From this stage, when the fluid was distinctly purulent in its characters, even to the naked eye, up to the time of scabbing, or 12th day of the eruption, the changes were a gradual increase in the free granular matter, and a diminution in the amount of corpuscles, which at last gave place to the granular matter; which last, along with epithelium cells, dried up to form the scab. The fluid of the vesicles therefore, exhibits a process of cell growth from nuclei to pus-corpuscles, and nucleated cells, which become more and more granular, and break up at last into free granular matter. The so-called pus-corpuscles are a stage in cell formation. Considering the small amount of granular matter, both free and within the corpuscles at the beginning, and its great abundance subsequently, the author was disposed to doubt the formation of these corpuscles and cells by the aggregation of granules subsequently surrounded by a cell-wall, but regarded the granular matter rather as a production of cell growth.—*Monthly Journal of Med. Science.*

Blood Stains.—In concluding the evidence given a short time since at the Marylebone police court, before Mr. Broughton, in the case of William Styles, Dr. Hassall made the following observations, important in a medico-legal point of view, in reference to blood stains:—"That, while the determination, by means of the microscope, of the nature of blood-stains, even when very recent, formed on cloth, linen, and other soft and porous textures, is usually a matter of considerable difficulty, and is often impossible, the determination of such stains, however old, as are placed on glass, porcelain, wood, and other hard and smooth surfaces, is in general unattended with difficulty, and extremely satisfactory. This difference is to be explained thus: in the one case the fibrin, albumen, and serum of the blood are in part absorbed, and pass into the cavities of the hairs or fibres of the wool or linen; the blood corpuscles are thus deprived of their preservative fluids, and shrink up—become misshapen or disintegrated; while, in the other case, the fibrin and albumen harden around the blood-discs in drying, and thus preserve them slightly altered in form only." Dr. Hassall stated that he had frequently succeeded in identifying the blood of different animals, preserved on slips of glass, after the lapse of six years. The stains should be examined in white of egg, and not in water.—*The Lancet.*

A work entitled Observations in Surgery, by Benj. Travers, late surgeon of St. Thomas's Hospital, London, has recently been published in that city.